timely. Such discussions help us to remember and to give to others the results of the great war experience.

With modern methods of traction splinting at his command, the efficient fracture surgeon is operating on an increasingly smaller percentage of fractures.

I regard the Thomas leg splint as perhaps the single most valuable special appliance in the fracture surgeons' armamentarium. In my experience and observation, the standard United States Army Thomas splint may be efficiently applied to most cases of leg fracture in adult men of average stature. A splint specially made for each individual case, though desirable, is rarely necessary. In using the standard splint, where the size of the ring does not insure the maintenance of contact beneath the ischial tuberosity, such contact is maintained constant by suspension of the ring to a Balkan frame or other overhead suspension apparatus.

In fractures of the lower leg, especially compound fractures near the ankle-joint, traction from the sole of the foot has rendered obsolete the use of the Finochetto stirrup, the pin through the os calcis and the always precarious and unsatisfactory methods of traction from one or another appliance encircling the ankle or foot. The tremendous and enduring adhesive capacity of celluloid-acetone solution has rendered traction from the sole of the foot both simple and sure of application.

I have found direct bone traction through caliper tongs applied to the femoral condyles, as mentioned by Cowan, of great value in cases of supracondylar fracture, fractures of the lower one-third of the femoral shaft and in some old non-unions of upper shaft fractures where much overlapping and shortening demanded very heavy traction. A particularly valuable feature of the caliper tongs is, that their use permits the knee-joint to be moved and frees this joint from the injurious effects of long continued traction strain.

Adjustable pressure pads clamped to the side-bar of the Thomas splint assist in reducing lateral displacements.

In my own practice, I have discarded the Spanish windlass except in emergencies. I now use a thumbscrew or turnbuckle for adjusting traction with a Thomas splint. By incorporating a small spring balance and keeping the balance registering a given number of pounds, I am assured of uniform tension upon the limb.

Any traction splint requires frequent adjustment. Eternal vigilance is the price of good results by conservative methods. Perhaps this is the reason some surgeons still seem to prefer other methods less efficient but more spectacular, and making a lesser tax upon the surgeon's time and energy.

Dr. Fairchild (closing)—The complimentary expressions of the gentlemen kind enough to discuss the paper are fully appreciated; the criticisms are accepted in the same spirit.

Dr. Shoemaker objects to the padded shoe as an attachment for extension as very dangerous. In trying to briefly conclude a paper which was growing too long, my brevity led to my being misunderstood. The padded shoe as a support for any case when heavy traction is required is dangerous and painful to the patient. It should never be used. I have made use of it in very low fractures of tibia and fibula where only moderate traction is required. Traction from the sole of the foot would be better.

Dr. Cowan's point in regard to the use of caliper traction on the condyles is of importance. I have, in low femur fractures, used it with great satisfaction. The principle is the same as the making of traction from a pin through the anterior portions of the condyles, but the trauma is less.

CONGENITAL HYPERTROPHIC PYLORIC STENOSIS IN INFANTS *

WITH REPORT OF FORTY-SEVEN CASES

By GUY COCHRAN, M. D.
(From The Children's Hospital, Los Angeles.)

The earliest record of an example of this disease was unearthed by Osler, and is contained in "Cases and Observations by the Medical Society of New Haven," in the State of Connecticut, 1718, by Hezekiah Beardsley. The following history of the case is given:

"A child of Mr. Joel Grannis, a respectable farmer in the town of Southington, in the first week of its infancy was attacked with a puking, or ejection of the milk, and of every other substance it received into its stomach almost instantaneously, and very little changed.

"The feces were in small quantity and of ash color, which continued with very little variation till its death. For these complaints a physician was consulted, who treated it as a common case arising from acidity in the proma via the testaceous powders and other absorbents and correctors of acid acrimony were used for a long time without any apparent benefit. I was at first inclined to attribute the disorder to a deficiency of bile and gastric juices, so necessary to digestion and chylification, joined with a morbid relaxation of the stomach, the action of which seemed wholly owing to the weight and pressure of its contents, as aliment taken in small quantities would often remain on it, till by the addition of small quantities, the whole, or nearly all, was ejected; but his thirst, or some other cause, most commonly occasioned his swallowing such large draughts as to cause an immediate ejection, and oftentimes before the cup was taken from the mouth.

"A number of the most respectable medical character were consulted and a variety of medicines were used to little or no effect. His death, though long expected, was sudden, which I did not learn till the second day after it took place. This late period, the almost intolerable stench and the impatience of the people who had collected for the funeral prevented so thorough an examination of the body as might otherwise have been made.

"I next examined the stomach, which was unusually large, the coats were about the thickness of a hog's bladder when fresh and distended with air; it contained about a wine pint of fluid exactly resembling that found in the vesicles before mentioned, and which I supposed to have been received just before its death. The pylorus was invested with a hard, compact substance, or scirrhosity, which so completely obstructed the passage into the duodenum as to admit with the greatest difficulty the finest fluid; whether this was the original disorder, or only a consequence, may perhaps be a question. In justice to myself I ought to mention that I had pronounced a scirrhosity in that part before the child's death."

In 1904, Holt wrote that, "without surgical in-

* Presented to the Section on Surgery at the Fifty-second Annual Session of the California Medical Association, San Francisco, June, 1923.

No.	Name	Sex	Age	Gas Wave	Adm.	Regurg.	Duration	Feeding	Weight Adm.	Weight Disc.	Cured	Died	Treatment
1	Henery, Howard..	M	8 wks.	Not stated	9-19-13	Yes	7 wks.	Br. 1 wk. Art. 7 wks.	6 lb. 10 oz.	.....	No	Yes	Feeding 2 days
2	Plushkel, Robt....	M	9 wks.	Not stated	3- 8-14	Yes	Not stated	Artif.	.....	6 lb. 7 oz.	Yes	No	Feeding
3	Vorhis, Dorothy...	F	5 wks.	Not stated	3-18-14	Not stated	Not stated	Breast	.....	.....	No	Yes	Gastro-Ent.
4	Sax, Lawrence.....	M	10 wks.	Not stated	8- 7-14	Yes	7 wks.	Breast	8 lbs.	6 lb. 8 oz.	No	Yes	Pylorosplasty
5	Barton, Harry.....	M	10 wks.	Yes	11-17-14	Yes	8 wks.	Breast	6 lb. 11 oz.	.....	Yes	No	Gastro-Ent.
6	Coursey, Maurice .	M	6 wks.	Yes	1- 2-15	Yes	6 wks.	Artif.	5 lb. 11 oz.	8 lb. 7 oz.	Yes	No	"
7	Arnold, Howard...	M	6 wks.	Yes	4- 6-15	Yes	Not stated	Artif.	6 lb. 11 oz.	6 lb.	Yes	No	Lavage
8	North, Melvin.....	M	6 wks.	Not stated	11- 5-15	Yes	5 wks.	Art. 4 wks.	6 lb. 7½ oz.	6 lb. 2 oz.	No	Yes	Gastro-Ent.
9	Vorhis, Leon.....	M	6 wks.	Yes	10- 5-17	Yes	10 days	Art. 1 wk.	7 lb. 12 oz.	6 lb. 10 oz.	Yes	No	Lavage
10	Redman, Ella.....	F	7 wks.	Yes	10-30-17	Yes	4½ wks.	Art. 4 wks.	5 lb. 10 oz.	6 lb. 4 oz.	Yes	No	Fredet-Rammstedt
11	Meehan, Edward..	M	2 mos.	Yes	2-12-18	Project.	Not stated	Not stated	7 lb. 13 oz.	7 lb. 5 oz.	No	Yes	" "
12	Gilb, Merle.....	M	5 wks.	Yes	9-25-18	Yes	3½ wks.	Breast	7 lb. 7 oz.	7 lb. 1 oz.	Yes	No	" "
13	Ray, Mary.....	F	5 mos.	Yes	2-11-19	Yes	2 mos.	Artif.	11 lb. 4 oz.	12 lb. 4 oz.	Yes	No	Lavage
14	Young, Theodore..	M	5 wks.	Yes	7-15-19	Project.	2 days	Breast	7 lb. 9½ oz.	.....	Yes	No	Fredet-Rammstedt
15	Smith, Milton.....	M	10 wks.	Yes	9-29-19	Yes	38 days	Breast	8 lb. 11 oz.	9 lb. 16 oz.	Yes	No	" "
16	Coules, Robt.....	M	2 mos.	Not stated	4-29-20	Yes	1 mo.	Breast	7 lb. 3½ oz.	6 lb. 15½ oz.	Yes	No	" "
17	Sandau, Robt.....	M	6 wks.	Not stated	6-25-20	Yes	Not stated	Breast	9 lb. 6 oz.	9 lb. 11 oz.	Imp.	No	Feeding
18	Lytle, David.....	M	6 wks.	Not stated	1-27-21	Yes-proj.	2 wks.	Breast	4 lb. 14 oz.	.....	No	Yes	Fredet-Rammstedt
19	Aldworth, Robt...	M	3 mos.	Not stated	1-31-21	Yes	1 wk.	Artif.	.....	.....	No	Yes	Feeding.....
20	Kingsbury, Don...	M	2½ mos.	Yes	2-11-21	Projec.	1 mo.	Breast	10 lb. 15 oz.	9 lb. 10 oz.	Yes	No	" .....
21	Walsh, Wm.....	M	2 mos.	Yes	4-21-21	Projec.	1 mo.	Artif.	7 lb. 10½ oz.	7 lb. 7½ oz.	Imp.	No	" .....
22	Lockwood, Jas.....	M	5 wks.	Not stated	4-29-21	Yes	10 days	Artif.	6 lb. 2 oz.	6 lb. 1½ oz.	Imp.	No	" .....
23	Donrene, Lyle.....	M	5 wks.	Yes	6-14-21	Yes	2 days	Breast	.....	.....	No	Yes	Fredet-Rammstedt
24	DePonce, Edmon..	M	7 wks.	None	6-22-21	Yes	Not stated	Artif.	7 lb. 10 oz.	12 lb. 12 oz.	Yes	No	" "
25	Harris, Robt.....	M	7 wks.	Yes	9-13-21	Yes	2 wks.	Breast	8 lb. 3 oz.	9 lb. 13½ oz.	Yes	No	" "
26	Peterson, Carl.....	M	4 mos.	Yes	9-25-21	Yes	2½ mos.	Artif.	8 lb. 9 oz.	9 lb. 13½ oz.	Yes	No	Feeding
27	Allen, Wm.....	M	7 wks.	Yes	10-12-21	Yes	6 wks.	Breast	7 lb. 4 oz.	6 lb. 15 oz.	Imp.	No	Fredet-Rammstedt
28	Pratt, Virginia....	F	3 wks.	None	10-17-21	Yes	2 wks.	Artif.	6 lb. 5 oz.	5 lb. 6 oz.	No	Yes	Feeding
29	Moloff, Sam.....	M	2 mos.	Yes	11-16-21	Yes	2 wks.	Artif.	7 lb. 7 oz.	8 lb. 2 oz.	Yes	No	"
30	McLaughlin, Chas.	M	1 mo.	Yes	10-31-21	Yes	1 wk.	Artif.	6 lb. 6 oz.	6 lb. 2 oz.	No	Yes	Fredet-Rammstedt
31	Campbell, Don....	M	2 mos.	Yes	11-18-21	Yes	2 mos.	Artif.	7 lb. 12 oz.	7 lb. 14 oz.	No	Yes	" "
32	McConnaeghy, Ed.	M	3 mo.	Yes	11-18-21	Yes	6 days	Artif.	6 lb. 6 oz.	7 lb. 15 oz.	Yes	No	" "
33	Campbell, Ralph..	M	5 wks.	Yes	1-15-22	Yes	2 wks.	Breast	10 lb.	9 lb. 13 oz.	Yes	No	" "
34	Nourse, Jas.....	M	5 wks.	Yes	1-15-22	Yes	10 days	Artif.	7 lb. 1 oz.	9 lb. 4 oz.	Yes	No	" "
35	Porter, Eileen.....	F	4 wks.	Yes	4-17-22	Yes	9 days	Breast	6 lb. 7 oz.	6 lb. 13 oz.	Imp.	No	" "
36	Bier, Leo.....	M	1 mo.	Yes	5-22-22	Yes	7 days	Breast	8 lb.	.....	No	Yes	" "
37	Gunn, Jack.....	M	7 wks.	Yes	6-26-22	Yes	3 wks.	Breast	6 lb. 5 oz.	7 lb. 3 oz.	Yes	No	" "
38	Bradway, Judson..	M	10 wks.	Yes	8-18-22	Yes	1 mo.	Artif.	8 lb. 9½ oz.	8 lb. 14½ oz.	Yes	No	" "
39	Bowles, John.....	M	3 mos.	Yes	9-16-22	Yes	2½ mos.	Artif.	9 lb. 2 oz.	8 lb. 10 oz.	Unimp	No	Feeding
40	Hackel, Pearl.....	F	10 wks.	Yes	9-23-22	Yes	10 wks.	Artif.	8 lb. 14 oz.	8 lb. 14 oz.	Imp.	No	"
41	Simon, Florence...	F	6 wks.	Not stated	10-31-22	Yes	2½ wks.	Breast	8 lb. 1 oz.	9 lb. 1 oz.	Yes	No	Fredet-Rammstedt
42	Greenberg, Israel..	M	4½ wks.	Not stated	12-15-22	Yes	2½ wks.	Br. 3½ wks.	8 lb.	7 lb. 8 oz.	Yes	No	" "
43	Maier, Wm.....	M	1 mo.	Not stated	12-24-22	Yes	10 days	Breast	.....	.....	Yes	No	" "
44	Casper, Bruce.....	M	26 days	Not stated	1-26-23	Yes	11 days	Breast	.....	.....	Yes	No	" "
45	Whitney, R.....	M	25 days	Not stated	4- 9-23	Yes	10 days	Br. 1 wk.	.....	.....	Yes	No	" "
46	Sanger, M.....	M	1 mo.	Not stated	5- 9-23	Yes	5 days	Br. 1 mo.	.....	.....	Yes	No	" "
47	Long, Florence....	F	11 wks.	Not stated	5- 4-23	Yes	6 wks.	Breast	.....	.....	Yes	No	" "

tervention, the chances for recovery are small. With well-proved symptoms, laparotomy is justifiable, and in at least one instance has been successful." Then followed an increase of interest, and an occasional gastro-enterostomy was performed. But the mortality was high. In 1908, Fredet devised a much simpler and better procedure. In 1910, Weber, and in 1912, Rammsted, announced modifications of Fredet's technique. Now the one of general choice is called the Fredet-Rammsted operation.

Pathology—"The lesion of hypertrophic stenosis of the pylorus is hyperplasia of the unstriped muscle cells of the circular coat, while the connective tissue is not increased." A pyloric tumor is always present. It is usually about the size of an olive, though it increases with duration of symptoms. There are no adhesions about it. It is smooth, firm, ivory colored, and cuts like cheese. It encroaches upon the lumen of the canal, and produces an edema of the mucosa by pressure. Following operation by gastro-enterostomy the tumor remains: following the Fredet-Rammsted operation it disappears.

Etiology—There are many theories: it is probably a congenital overgrowth of muscle tissue. There is a case reported by Dent of one in a seven months' old foetus, and several have been seen in babies who died at birth. They are frequently associated with enlarged thymus glands, or other congenital defects—such as imperforate annus or club-foot.

Diagnosis—It is the history of mechanical obstruction—vomiting, which becomes projectile: this is followed by constipation, mucous stools and a rapid loss of weight. There is a visible active peristalsis from left to right. There is a palpable tumor at the region of the pylorus. This tumor can usually be felt, unless the pylorus lies too close to the liver edge. In the great majority of cases, the diagnosis should not be difficult, but in obscure cases aid may be given by fluoroscopic examination, especially when a tumor cannot be felt, and to distinguish between pylorospasm and stenosis, for we cannot believe with Haas that both are the same, and that it is a matter only of degree of spasm. We know that with hypertrophy we have spasm, but frequently, from various cases, we have spasm without hypertrophy.

Treatment—The treatment is logically medical, for there are all degrees of severity of symptoms in this, as in other pathologic conditions. Observation and medical effort is justifiable so long as the baby does well, or has lost not more than 20 per cent of its body weight, but the greatest number of these cases are not seen until late, and many almost moribund, when surgery is the only hope. That is why the mortality is so high, for many of these babies die of starvation—not of the simple surgical procedure.

Operation—There is a great variance of opinion regarding the anaesthesia. Many prefer to operate these cases under local, but it is not our experience—the babies squirm and cry—the intestines and stomach push out of the wound, and cause much annoyance and delay, and increase the shock to the patient. These little patients require little ether. The entire operation should occupy only fifteen to twenty minutes, and we have seen no untoward effects from the general anesthetic.

The incision is upper right rectus. It should not be over two inches in length. The tumor is felt, and by the aid of a blunt, rubber-covered hook the pylorus is brought out through the wound. The tumor is incised longitudinally, along the bloodless area. This incision should be only deep enough to spread sufficiently so that a blunt instrument—preferably a straight forceps—can be inserted and blunt dissection carried on. The tumor tissue tears easily, and soon the gray mucosa is seen bulging upward. This dissection extends the entire length of the tumor, for if any bands are left the result is not accomplished. Sufficient width of muscle layer must be removed to allow the mucosa to bulge into the entire length of the wound. This is easy at the thickened gastric end, but care must be taken, for the duodenal end thins out quickly and is easily torn. We have never sutured any omentum, or done any plastic work to cover the mucosa. The abdominal wound is closed in tiers, and also with silkworm retention sutures, for these wounds need support for about ten days or two weeks.

In post-operative care, the babies are given glucose or salt solution by drip, or under the skin. Feeding is begun one hour after operation—a teaspoonful of warm water alternating with diluted breast milk every two hours. This is increased gradually until by the fourth or fifth day the child is receiving full feedings. Throughout the entire care of these cases the heartiest co-operation is required between pediatrician and surgeon.

Since 1914, we have had forty-seven patients at the Children's Hospital who fall into this group, thirty-three of whom were operated upon. Twelve of those operated upon died; twenty-one recovered; three of the operations were gastro-enterostomies. Of the fourteen others treated medically, two died.

Of the forty-seven patients, there were forty-two boys and five girls. The ages varied from five weeks to four months. Twenty-three were artificially fed; twenty-four were breast fed. Duration of symptoms varied from seven days to ten weeks. Those operated upon had all lost 20 per cent or over of body weight.

Our mortality is too high, and to assign the reason is one of the objects of this paper. Most of our cases are charity ones, and are brought to the hospital nearly moribund. In these we have operated as the only possible thing we could offer. None has died on the table, but several have gone on to death from starvation in a short time. The earlier cases were treated expectantly with atropine and feedings, and became surgical when such treatment failed. We have only lost one of this group with peritonitis due to faulty technique. The diagnosis is usually not difficult if physicians are on the watch. We have used no plates, and only occasionally the fluoroscope for aid in diagnosis. We would recognize more of these cases and save more of these babies if we would watch all sick babies with projectile vomiting, constipation, visible peristalsis, rapid loss of weight, and other usual symptoms of

obstruction. We should keep it in mind from the beginning that these cases may become surgical.

SUMMARY

We have the greatest admiration for the work of Downes, who gave such a stimulus to the study of the subject of Congenital Hypertrophic Pyloric Stenosis. His experiences have been corroborated in our work in many ways:

1. Ether anaesthesia is preferable to local.

2. The Fredet-Rammsted operation is much simpler and more quickly performed than gastro-enterostomy, and therefore the best technique to follow in all cases.

3. In most cases the differentiation between pylorospasm and stenosis is clear, and only in questionable cases should fluoroscopic aid be resorted to. These little patients are too sick to be loaded up with barium unless it is absolutely necessary.

4. Cases under observation should not be allowed to lose too much weight before resorting to surgery; after loss of 20 per cent of body weight these cases become poor risks instead of good. Many come to us so late that we cannot avoid operation, but this is the chief cause of our high mortality. We lost most of our cases during the early years while we were doing gastro-enterostomies or working under local anaesthesia. There will be deaths under the most skillful care, but with the present simpler technique we hope for much better results in the future.

1136 West Sixth Street

DISCUSSION

Emmet Rixford (Stanford Medical School, San Francisco)—In his virile short sentences the author has well epitomized the salient points in the modern management of cases of congenital hypertrophic stenosis of the pylorus. I can only emphasize his statement that thorough co-operation of pediatrician and surgeon is essential, that operation should not be delayed if the condition is not soon ameliorated by the feeding of semi-solid food. The author's experience duplicates that of most surgeons, in that in many of his cases, more particularly the earlier ones, operation was too long delayed.

An important part of the operative technique should be swathing the child's limbs with cotton to lessen the loss of body heat, for these tiny mites are half-starved and chill easily, especially when ether anaesthesia is used. Many surgeons prefer chloroform if they happen to have anaesthetists who are experienced in using that drug. I would also add some emphasis to the point that, in the Fredet-Rammsted operation, it is very easy to open the mucous membrane of the duodenum. Any modification of technique which will save time is desirable, such as closing the abdominal wound with through-and-through sutures. For this I prefer silk, for it is less irritating to the child than silkworm gut unless it be very fine.

E. C. Fleischner, M. D. (350 Post Street, San Francisco)—The importance of an article which calls attention to the salient points in the management of hypertrophic pyloric stenosis in infants cannot be overestimated. There is no condition in infancy in which the successful outcome depends so much upon careful observation and logical treatment as in this disease. From the standpoint of the pediatrist it is unquestionably true that, in the hands of a skillful surgeon, early surgical interference is associated with more satisfactory results than indefinite procrastination and late surgery, even though the latter procedure may spare certain infants the necessity and risk of a laparotomy. This is particularly true in infants who are receiving breast milk, so much so that when a diagnosis of true stenosis has been made in a nursing infant, who, up to the onset of the disease, has been receiving an excellent mother's milk it is better to operate early and conserve the human milk supply than to temporize with various artificial foods, as a result of which the breast milk is lost and frequently operative interference required at a later date. There is one point in connection with the management of these cases to which particular attention should be called and upon which the greatest stress should be laid. Next to the importance of early operative interference in the successful treatment of these cases no one single procedure is as valuable as the plentiful supply of fluid to the tissues of these infants before operation. This is strikingly true in those cases that come to late surgery, but equally important before all laparotomies. These infants suffer as much from dehydration and perhaps even more so than from starvation, and it is possible to obviate the harmful effects of water privation by hypodermoclysis before operation, and in this manner improve tremendously the chances that the child has of recovery. It may be a dangerous generalization because of the difficulty in determining who is a good surgeon and who a mediocre one, but, in the hands of a capable man, early surgery will be productive of better results with less danger than temporizing and late surgical interference.

Edward S. Ruth, M. D. (6548½ Hollywood Boulevard, Los Angeles)—In discussing this paper I would like to confine my remarks to a possible etiological cause of hypertrophic pyloric stenosis.

In all series of hypertrophic pyloric stenosis cases, two factors stand out above all other symptoms and observations. First an overwhelming majority of cases occur in the male infant. In all series from 83 per cent to 95 per cent are in the male. Second, it is a disease which has its onset of symptoms from birth or soon after. These two factors it seems to me are significant from an etiological standpoint. Heretofore the etiological cause has been attributed to some nerve entity that, in some way, was responsible for the enormous overproduction of smooth muscle fibers about the pyloric end of the stomach. A great deal of experimental work has been done by Strouss, Trumpeer, and Bernstein by mechanically obstructing the pylorus, but nothing has been accomplished except for reproducing the classical symptoms of hypertrophic pyloric stenosis.

Scammond, in some of his weight and growth curves of the various organs of the foetus and postnatal life, showed rapid and enormous growth of the uterus up to the time of birth. After birth there is a rapid subinvolution and decrease in the size of the uterus, and its growth that was attained at the time of birth is not again reached until much later in life. This apparently indicates that we have something that stimulates smooth muscle growth during pregnancy. This I have termed a smooth muscle activator.

If the hypothesis is correct that the prenatal growth of the uterus is due to smooth muscle activator, then we may have the same muscle activator at work in the wall of the uterus of the mother, producing the enormous hypertrophy and the hyperplasia that takes place during the period of gestation. Now, assuming that we have a smooth muscle activator at work during pregnancy, I believe that this same activator may also produce hypertrophy and hyperplasia in the smooth muscle in the pylorus and stomach. This is the only place in the human body where we have a large accumulation of smooth muscle fibres. For some time it has been pretty definitely known that the hypertrophy of the pylorus is a prenatal growth, inasmuch as several have been reported in foetuses of seven months of age. Also Kerley reports one in an infant three

days of age. Again, surgeons who have operated upon infants with pyloric stenosis have also suggested that this enormous hypertrophy must begin in prenatal life, because it seemed impossible that such a growth could take place in a few weeks or a few days' time.

This explanation is, of course, hypothetical, but I believe that it has merit.

Chemical Foundation Wins (Propaganda for Reform)—During the late war, our Government seized many German patents on synthetic drugs. Later the Alien Property Custodian, on executive order of President Wilson, sold 4700 German chemical patents to the Chemical Foundation, Inc. This corporation agreed in turn to license any American firm that could present evidence of reliability in chemical manufacture to manufacture under these patents. As a result of this action, physicians may today obtain different brands of arsphenamin instead of one proprietary "salvarsan"—and at competitive prices. The same is true of other useful synthetics. About a year and a half ago, President Harding instructed the Alien Property Custodian to take steps to secure the return of all patents sold to the Chemical Foundation, Inc., on the ground that the price paid was inadequate and the transaction illegal. Suit was instituted by the Government against the Chemical Foundation, Inc., for the recovery of the patents. The suit was won by the Chemical Foundation, Inc. In the decision of the court, it was held that the price was adequate, for the reason that many of the patents were non-workable and that, therefore, because of the financial risk and hazard, the value of the patents "was too slight and problematical to warrant the payment by American citizens of a sum even remotely approximating what they might have been worth to the German owners for their monopolistic purposes." Hence, the bill of complaints filed by the Government was set aside. (Journal A. M. A., January 12, 1924, p. 130.)

A Medical History Society—An organization meeting of medical men and others interested in Medical History was held on Saturday, March 15, at 8 p. m. The meeting was called to order by Doctor Ophuls in the new quarters of the historical section of the Lane Medical Library, on the third floor in the library building.

Emmet Rixford was elected temporary chairman and Henry Mehrtens secretary. Doctor Ophuls outlined the origin of the historical library, calling attention to the latest large addition of books. These were procured by the efforts of Adolph Barkan from Prof. E. Seidel in Meisen, and include 5000 old manuscripts and rare medical books. Continual additions of old and rare medical books are being made to this collection.

It was the opinion of those present that such a society should consist not only of medical men interested in the history of medicine, but that specialists in the allied sciences would also find interest and profit in this collection.

A committee, consisting of Doctors Ophuls (chairman), Evans, P. K. Brown, Hyman and Kerr were appointed to formulate a draft of the organic laws of the society and to get in touch with members of the profession and others who are interested in its ends.

Voltaire's and Frank Crane's Estimate of Physicians Compared—Voltaire once said that "Doctors were men who crammed medicine, about which they knew little, into bodies about which they knew less, to cure diseases about which they knew nothing." Dr. Frank Crane says that regular physicians have done, and are doing more for the human race than all the cults, fads, quacks and pathies put together.—Boston Medical and Surgical Journal, March 6, 1924.

PERFORATIVE APPENDICITIS—APPENDICECTOMY VERSUS DRAINAGE *

By S. M. SPROAT, M. D., Portola, Calif.

In acute perforative appendicitis, with definite abscess formation, there is great temptation to remove the offending member, too often to the detriment of the patient. With a well-walled-off appendiceal abscess, the appendix lying at any portion of its length outside the wall, it is far better surgery to drain the cavity and leave undisturbed the appendix. In the free cases, where nature has made no attempt at limitation of the infection, it is better to remove the offending member, where this can be easily accomplished, but, where protecting walls must be broken down, tissues traumatized with extensive handling, and the infected material disseminated widely, such a procedure is not to the best interests of the patient.

In the cases reported, the following technique was generally employed. The abdomen and anterior rectus sheath was opened over a mid-rectus incision, and the intact muscle freed from its sheath and pulled toward the mid-line. Then, without injury to the muscle, the posterior sheath was opened in the same line as the anterior, and the peritoneum in the same location. When the abdomen is later closed, the intact muscle serves as a support to the abdomen and tends to prevent the herniae, which are so common in these cases. On entering the abdomen, when the omentum was encountered, it was always kept to the left, and the exploration was conducted as low down to the right as possible. Gauze-packs were not employed within the abdomen unless absolutely necessary, but only served to keep the omentum pressed well to the left side of the incision, and thus saved the tissues additional trauma. On encountering an abscess wall, a stitch or two was often placed in the omentum to hold it temporarily to the abdominal wall. The abscess cavity was then entered from its lowest possible point on the right-hand side of the abdomen.

The cavity was carefully explored with the gloved finger and the appendix located from within the abscess cavity itself. Should it lie without the walls in any part, it is in nowise disturbed. The walls of the abscess are also not disturbed in any way. The cavity is thoroughly and carefully explored to determine the presence of any concretion or foreign material that may have been extruded from the appendix. If any such is found, it is removed. There is no irrigation attempted, and it has been my unfailing experience that the more thorough the attempts at cleaning the peritoneum and the more extensive the operative measures in these cases, the poorer the prognosis for the patient.

We all are aware that infection and localized abscess not infrequently follows difficult clean cases that require long and tedious removal of a non-perforative appendix. It is my firm belief that the handling and disturbing of the bowels, omentum, and abdominal contents that is necessary to remove an appendix in abscess cases very often leads to the

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